CLAIMS

What is claimed is:

1.   A method comprising:

    informing one or more mobile units within a wireless network that a first access point is capable of handling data compression;

    informing the first access point that a first mobile unit is capable of handling compression;

    optionally compressing data at the first mobile unit prior to transmitting the data to the first access point; and

    optionally compressing data at the first access point prior to transmitting the data to the first mobile unit.

2.   The method of claim 1 wherein the first access point broadcasts a message to its associated mobile units to inform the associated mobile units of its compression capability.

3.   The method of claim 1 wherein the first access point sends a test frame to a newly associated mobile unit to inform the newly associated mobile unit of its compression capability.

4.   The method of claim 1 wherein the first access point informs the one or more mobile units of specific data compression schemes that are supported by the first access point.

1   5.   The method of claim 1 wherein the first mobile unit informs the first

2   access point of its compression capability by sending compressed data to the first

3   access point.

1   6.   The method of claim 1 wherein optionally compressing data at the first

2   mobile unit comprises:

3   the first mobile unit deciding whether to compress the data based upon at

4   least one factor selected from the group consisting of a first factor indicating

5   whether the first access point is capable of handling data compression, a second

6   factor indicating whether the first mobile unit can perform data compression

7   according to one or more specific compression schemes that are supported by the

8   first access point, a third factor indicating whether the size of data to be

9   transmitted exceeds a first threshold level, a fourth factor indicating how much

10   data are waiting in a queue to be transmitted, a fifth factor indicating a relative

11   position of the data to be compressed with respect to other data in the queue that

12   are waiting to be transmitted, and a sixth factor indicating whether the type of the

13   data to be compressed is suitable for data compression, a seventh factor indicating

14   whether previous compression gain exceeds a second threshold level, and an

15   eighth factor indicating a relative computational power of the first mobile unit to

16   be used for data compression tasks.

1   7.   The method of claim 1 wherein the first mobile unit informs the first

2   access point of its compression capability by sending a message to the first access

3   point.

1   8.   The method of claim 1 wherein optionally compressing data at the first

2   access point comprises:

3   the first access point deciding whether to compress the data based upon at

4   least one factor selected from the group consisting of a first factor indicating

5   whether the first mobile unit is capable of handling data compression, a second

6   factor indicating whether the first access point can perform data compression

7   according to one or more specific compression schemes that are supported by the

8   first mobile unit, a third factor indicating whether the size of data to be transmitted

9   exceeds a first threshold level, a fourth factor indicating how much data are

10   waiting in a queue to be transmitted, a fifth factor indicating a relative position of

11   the data to be compressed with respect to other data in the queue that are waiting

12   to be transmitted, and a sixth factor indicating whether the type of the data to be

13   compressed is suitable for data compression, a seventh factor indicating whether

14   previous compression gain exceeds a second threshold level, and an eighth factor

15   indicating a relative computational power of the first access point to be used for

16   data compression tasks.

1   9.   A method comprising:

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2   a first access point in a wireless network communicating to a first mobile

3   unit to inform the first mobile unit that the first access point is capable of handling

4   data compression;

5   the first mobile unit, upon being informed that the first access point is

6   capable of handling data compression, optionally transmitting data in compressed

7   format to the first access point; and

8   the first access point, upon receiving compressed data from the first mobile

9   unit which indicates to the first access point that the first mobile unit is capable of

10   handling data compression, optionally transmitting data in compressed format to

11   the first mobile unit.

1   10.   The method of claim 9 wherein the first access point determines whether

2   to compress data based upon one or more factors being indicative of whether the

3   benefit to be obtained from transmitting compressed data exceeds the cost

4   associated with compressing the data.

1   11.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a first factor indicating whether the first mobile unit is

3   capable of handling data compression.

1   12.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a second factor the first access point can perform data

3   compression according to one or more specific compression schemes that are

4   supported by the first mobile unit.

1   13.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a third factor indicating whether the size of data to be

3   transmitted exceeds a first threshold level.

1   14.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a fourth factor indicating how much data are waiting in a

3   queue to be transmitted.

1   15.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a fifth factor indicating a relative position of the data to

3   be compressed with respect to other data in the queue that are waiting to be

4   transmitted.

1   16.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a sixth factor indicating whether the type of the data to

3   be compressed is suitable for data compression.

1   17.   The method of claim 10 wherein the one or more factors considered by the

2   first access point include a seventh factor indicating whether previous

3   compression gain exceeds a second threshold level.

1 18. The method of claim 10 wherein the one or more factors considered by the

2 first access point include an eighth factor indicating a relative computational

3 power of the first access point to be used for data compression tasks.

1 19. The method of claim 9 wherein the first mobile unit determines whether to

2 compress data based upon one or more factors being indicative of whether the

3 benefit to be obtained from transmitting compressed data exceeds the cost

4 associated with compressing the data.

1 20. The method of claim 19 wherein the one or more factors considered by the

2 first mobile unit include a first factor indicating whether the first access point is

3 capable of handling data compression.

1 21. The method of claim 19 wherein the one or more factors considered by the

2 first mobile unit include a second factor indicating whether the mobile unit can

3 perform data compression according to one or more specific compression schemes

4 that are supported by the first access point.

1 22. The method of claim 19 wherein the one or more factors considered by the

2 first mobile unit include a third factor indicating whether the size of data to be

3 transmitted exceeds a first threshold level.

1   23.   The method of claim 19 wherein the one or more factors considered by the

2   first mobile unit include a fourth factor indicating how much data are waiting in a

3   queue to be transmitted.

1   24.   The method of claim 19 wherein the one or more factors considered by the

2   first mobile unit include a fifth factor indicating a relative position of the data to

3   be compressed with respect to other data in the queue that are waiting to be

4   transmitted.

1   25.   The method of claim 19 wherein the one or more factors considered by the

2   first mobile unit include a sixth factor indicating whether the type of the data to be

3   compressed is suitable for data compression.

1   26.   The method of claim 19 wherein the one or more factors considered by the

2   first mobile unit include a seventh factor indicating whether previous compression

3   gain exceeds a second threshold level.

1   27.   The method of claim 19 wherein the one or more factors considered by the

2   first mobile unit include an eighth factor indicating a relative computational power

3   of the first mobile unit to be used for data compression tasks.

1   28.   An access point in a wireless local area network comprising:

2   logic to inform one or more mobile units operated within the network that

3   the access point is capable of handling compression;

4   logic to determine whether a particular mobile unit is capable of handling

5   compression; and

6   logic to optionally transmit data frames in compressed format to a

7   particular mobile unit that is capable of handling compression.

1   29.   The access point of claim 28 wherein the logic to inform comprises:

2   logic to broadcast the access point's compression capability to the one or

3   more mobile units.

1   30.   The access point of claim 28 wherein the logic to inform comprises:

2   logic to send a test frame to a particular mobile unit to inform that

3   particular mobile unit of the access point's compression capability.

1   31.   The access point of claim 28 wherein information regarding the access

2   point's compression capability further includes information indicating specific

3   types of compression schemes that are supported by the access point.

1   32.   The access point of claim 28 wherein the logic to determine whether a

2   particular mobile unit is capable of handling data compression comprises:

3   logic to identify whether a data frame received from the particular mobile

4   unit is compressed.

1 33. The access point of claim 28 wherein the logic to optionally transmit

2 compressed data frames comprises:

3   logic to decide whether to compress one or more particular frames prior to

4 transmitting the one or more particular frames to a particular mobile unit; and

5   logic to compress the one or more particular data frames upon deciding

6 that the one or more particular data frames should be compressed.

1 34. The access point of claim 28 wherein the logic to decide whether to

2 compress including:

3   logic to determine whether a compression threshold is met based upon one

4 or more factors being indicative of whether the one or more particular data frames

5 to be transmitted should be compressed prior to transmission.

1 35. The access point of claim 34 wherein the one or more factors considered

2 by the access point include a first factor indicating whether the particular mobile

3 unit is capable of handling data compression, a second factor indicating whether

4 the access point can perform data compression according to one or more specific

5 compression schemes that are supported by the particular mobile unit, a third

6 factor indicating whether the size of data to be transmitted exceeds a first

7 threshold level, a fourth factor indicating how much data are waiting in a queue to

8 be transmitted, a fifth factor indicating a relative position of the data to be

9 compressed with respect to other data in the queue that are waiting to be

10 transmitted, and a sixth factor indicating whether the type of the data to be

11 compressed is suitable for data compression, a seventh factor indicating whether

12 previous compression gain exceeds a second threshold level, and an eighth factor

13 indicating a relative computational power of the access point to be used for data

14 compression tasks.

1 36. A mobile unit operated within a wireless local area network, comprising:

2   logic to determine whether a particular access point with which the mobile

3 unit is associated is capable of handling compression; and

4   logic to optionally transmit data in a compressed format to the particular

5 access point.

1 37. The mobile unit of claim 36 wherein the logic to determine comprises:

2   logic to detect a broadcast message transmitted by the particular access

3 point that informs one or more mobile units within the network of the access

4 point's compression capabilities.

1 38. The mobile unit of claim 36 wherein the logic to determine comprises:

2   logic to identify a test data frame from a particular access point with which

3 the mobile unit is associated, the test data frame being used to inform the mobile

4 unit of the access point's compression capabilities.

1 39. The mobile unit of claim 36 wherein the logic to optionally transmit data

2 in compressed format comprises:

3   logic to decide whether to compress one or more particular data frames

4   prior to transmitting the one or more particular frames to a particular access point;

5   and

6   logic to compress the one or more particular data frames upon deciding

7   that the one or more particular data frames should be compressed.

1   40.   The mobile unit of claim 36 wherein the logic to decide whether to

2   compress including:

3   logic to determine whether a compression threshold is met based upon one

4   or more factors being indicative of whether the one or more particular data frames

5   to be transmitted should be compressed prior to transmission.

1   41.   The method of claim 40 wherein the one or more factors considered by the

2   mobile unit include a first factor indicating whether the particular access point is

3   capable of handling data compression, a second factor indicating whether the

4   mobile unit can perform data compression according to one or more specific

5   compression schemes that are supported by the particular access point, a third

6   factor indicating whether the size of data to be transmitted exceeds a first

7   threshold level, a fourth factor indicating how much data are waiting in a queue to

8   be transmitted, a fifth factor indicating a relative position of the data to be

9   compressed with respect to other data in the queue that are waiting to be

10   transmitted, and a sixth factor indicating whether the type of the data to be

11   compressed is suitable for data compression, a seventh factor indicating whether

12   previous compression gain exceeds a second threshold level, and an eighth factor

13   indicating a relative computational power of the mobile unit to be used for data

14   compression tasks.

1   42.   A wireless local area network comprising:

2   a plurality of electronic devices including a first device and a second

3   device wherein the first device and the second device are configured to inform

4   each other of whether they are capable of handling data compression, the first

5   device and the second device, upon knowing that the other unit is capable of

6   handling data compression, optionally compress data prior to transmitting the data

7   to each other.

1   43.   The wireless local area network of claim 42 wherein the first device is an

2   access point.

1   44.   The wireless local area network of claim 42 wherein the second device is a

2   mobile unit.

1   45.   The wireless local area network of claim 42 wherein the first device

2   broadcasts a message to inform the second device that the first device is capable

3   of handling data compression.

1   46.   The wireless local area network of claim 42 wherein the first device

2   broadcasts the message periodically.

1 47. The wireless local area network of claim 42 wherein the first device sends

2 a test frame to the second device to inform the second device that the first device

3 is capable of handling data compression.

1 48. The wireless local area network of claim 42 wherein the first device, upon

2 receiving data indicated by the second device as compressed data, knows that the

3 second device is capable of handling data compression.

1 49. The wireless local area network of claim 42 wherein the first device, in

2 deciding whether to send data in compressed format to the second device,

3 considers one or more factors including a first factor indicating whether the

4 second device is capable of handling data compression, a second factor indicating

5 whether the first device can perform data compression according to one or more

6 specific compression schemes that are supported by the second device, a third

7 factor indicating whether the size of data to be transmitted exceeds a first

8 threshold level, a fourth factor indicating how much data are waiting in a queue to

9 be transmitted, a fifth factor indicating a relative position of the data to be

10 compressed with respect to other data in the queue that are waiting to be

11 transmitted, and a sixth factor indicating whether the type of the data to be

12 compressed is suitable for data compression, a seventh factor indicating whether

13 previous compression gain exceeds a second threshold level, and an eighth factor

14 indicating a relative computational power of the first device to be used for data

15 compression tasks.

1   50.   The wireless local area network of claim 42 wherein the second device, in

2   deciding whether to send data in compressed format to the first device, considers

3   one or more factors including a first factor indicating whether the first device is

4   capable of handling data compression, a second factor indicating whether the

5   second device can perform data compression according to one or more specific

6   compression schemes that are supported by the first device, a third factor

7   indicating whether the size of data to be transmitted exceeds a first threshold level,

8   a fourth factor indicating how much data are waiting in a queue to be transmitted,

9   a fifth factor indicating a relative position of the data to be compressed with

10   respect to other data in the queue that are waiting to be transmitted, and a sixth

11   factor indicating whether the type of the data to be compressed is suitable for data

12   compression, a seventh factor indicating whether previous compression gain

13   exceeds a second threshold level, and an eighth factor indicating a relative

14   computational power of the second device to be used for data compression tasks.

1   51.   A machine-readable medium comprising instructions which, when

2   executed by a machine, cause the machine to perform operations comprising:

3   informing one or more mobile units within a wireless network that a first

4   access point is capable of handling data compression;

5   informing the first access point that a first mobile unit is capable of

6   handling compression;

7   optionally compressing data at the first mobile unit prior to transmitting

8   the data to the first access point; and

9   optionally compressing data at the first access point prior to transmitting

10   the data to the first mobile unit.

1   52.   The machine-readable medium of claim 51 wherein the first access point

2   broadcasts a message to its associated mobile units to inform the associated

3   mobile units of its compression capability.

1   53.   The machine-readable medium of claim 51 wherein the first access point

2   sends a test frame to a newly associated mobile unit to inform the newly

3   associated mobile unit of its compression capability.

1   54.   The machine-readable medium of claim 51 wherein the first access point

2   informs the one or more mobile units of specific data compression schemes that

3   are supported by the first access point.

1   55.   The machine-readable medium of claim 51 wherein the first mobile unit

2   informs the first access point of its compression capability by sending compressed

3   data to the first access point.

1   56.   The machine-readable medium of claim 51 wherein optionally

2   compressing data at the first mobile unit comprises:

3   the first mobile unit deciding whether to compress the data based upon at

4   least one factor selected from the group consisting of a first factor indicating

5   whether the first access point is capable of handling data compression, a second

6   factor indicating whether the first mobile unit can perform data compression

7   according to one or more specific compression schemes that are supported by the

8   first access point, a third factor indicating whether the size of data to be

9   transmitted exceeds a first threshold level, a fourth factor indicating how much

10 data are waiting in a queue to be transmitted, a fifth factor indicating a relative

11 position of the data to be compressed with respect to other data in the queue that

12 are waiting to be transmitted, and a sixth factor indicating whether the type of the

13 data to be compressed is suitable for data compression, a seventh factor indicating

14 whether previous compression gain exceeds a second threshold level, and an

15 eighth factor indicating a relative computational power of the first mobile unit to

16 be used for data compression tasks.

1   57.   The machine-readable medium of claim 51 wherein optionally

2   compressing data at the first access point comprises:

3   the first access point deciding whether to compress the data based upon at

4   least one factor selected from the group consisting of a first factor indicating

5   whether the first mobile unit is capable of handling data compression, a second

6   factor indicating whether the first access point can perform data compression

7   according to one or more specific compression schemes that are supported by the

8   first mobile unit, a third factor indicating whether the size of data to be transmitted

9   exceeds a first threshold level, a fourth factor indicating how much data are

10 waiting in a queue to be transmitted, a fifth factor indicating a relative position of

11 the data to be compressed with respect to other data in the queue that are waiting

12 to be transmitted, and a sixth factor indicating whether the type of the data to be

13   compressed is suitable for data compression, a seventh factor indicating whether

14   previous compression gain exceeds a second threshold level, and an eighth factor

15   indicating a relative computational power of the first access point to be used for

16   data compression tasks.